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MYCOLOGIA

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NORTH AMERICAN SPECIES OF ASCODESMIS

FRED J. SEAVER

(WITH PLATE 172, CONTAINING 9 FIGURES)

During the month of January, 1915, the writer secured an excellent growth of a species of *Ascodesmis* on the excrement of pigs sent from Porto Rico[1] by Mr. George L. Fawcett. The spores of this species were slightly ellipsoid and, when mature, were strongly roughened, although they were never found to be reticulate. At first it was thought that this species might be distinct from *Ascodesmis nigricans* in which species the spores are usually described as reticulate. Later, however, it was concluded that the apparent difference in spore characters was simply due to variation and the Porto Rican plants were finally referred to *Ascodesmis nigricans,* the only species known from North America.

In November, 1915, an abundant growth of *Ascodesmis nigricans* was obtained on the excrement of raccoon dog from the Bronx Zoological Garden. Careful study of this species from

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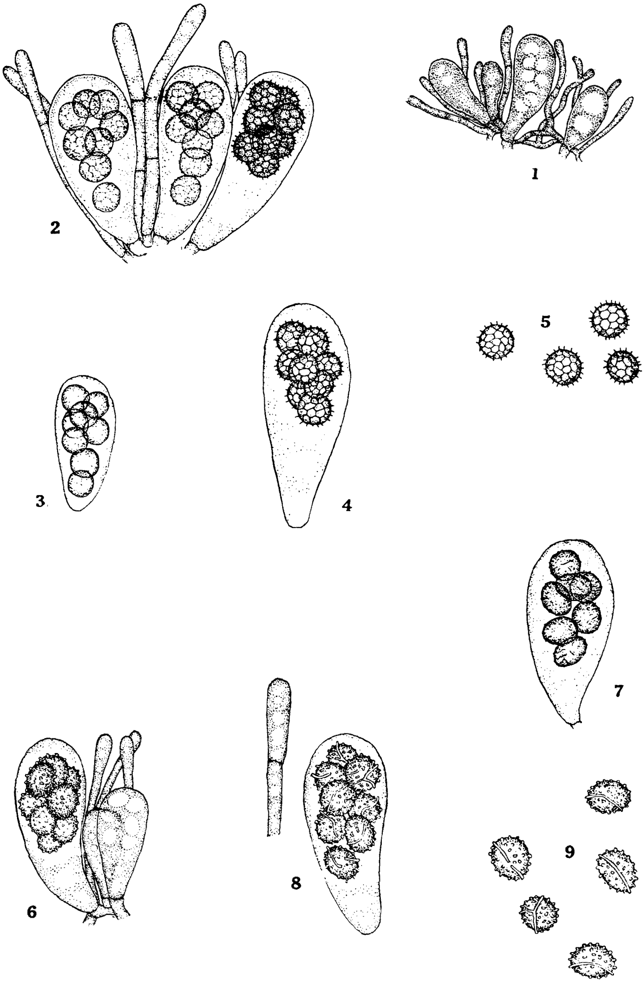
[1] A collection of pig dung from New Jersey was placed in culture during the present season in order to determine whether the Porto Rican species was a geographical species or was governed by the substratum alone as is the case with so many of the coprophilous discomycetes. On December 11, 1915, since this paper was submitted, the species described here as new was found also on the New Jersey material. In all essential points the New Jersey specimens agree with the specimens grown on the same kind of material from Porto Rico and both differ from *Ascodesmis nigricans,* which we have still growing in the laboratory, as pointed out in the illustrations and descriptions accompanying this paper.



1–5. ASCODESMIS MICROSCOPICA (CROUAN) SEAVER
6–9. ASCODESMIS PORCINA SEAVER

material derived from these cultures showed the spores to be globose and at maturity perfectly and distinctly reticulate, the ridges of the reticulations extending beyond the periphery of the spore as minute spines.

After a comparative study of the spores of the two specimens of *Ascodesmis,* the one grown on the excrement of pigs from Porto Rico and the other on the excrement of raccoon dog from the Zoological Garden, it was decided that they represented two distinct species.

So far as noted, the external characters of the two plants were identical. The apothecia appeared on a superficial mycelium and consisted of a tuft of asci without any well-developed excipulum. The form and size of the apothecia in the two species is almost identical. The spores of the Porto Rican species are slightly ellipsoid, although they would pass as subglobose. The chief difference is in the spore markings, those of the Porto Rican species consisting of tubercles or short interrupted ridges. In addition to this, these spores are often marked with an irregular ridge of meridial band which may be simple or occasionally branched. Since several hundred spores have been examined and these characters found to be constant and decidedly different from those of *Ascodesmis nigricans,* the Porto Rican specimens are regarded as new and described as *Ascodesmis porcina.* The differences in spore characters are shown in the accompanying plate. The following is a synopsis of the genus as at present known for North America.

ASCODESMIS Van Tiegh. Bull. Soc. Bot. Fr. 23: 271. 1876

Apothecia minute, less than 1 mm. in diameter, very simple, consisting of a cluster of asci and paraphyses springing from a clump of basal mycelium; excipulum almost entirely undeveloped; asci comparatively few to each plant, very broad, 8-spored; spores globose or subglobose, hyaline, then pale-brown to blackish, becoming rough at maturity; paraphyses sparse.

Type species, *Ascodesmis nigricans* Van Tiegh.

Spores globose, reticulated.	*A. microscopica.*
Spores subglobose, rough but not reticulated.	*A. porcina.*

Ascodesmis microscopica (Crouan)

Ascobolus microscopicus Crouan, Ann. Sci. Nat. IV. **7**: 175. 1857.
?*Ascobolus caninus* Fuckel, Hedwigia **5**: 3. 1866.
Ascodesmis nigricans Van Tiegh. Bull. Soc. Bot. Fr. **23**: 275. 1876.
Boudiera microscopica Cooke, Grevillea **6**: 76. 1877.
?*Boudiera canina* Schröt. Krypt.-Fl. Schles. 3^2:55. 1893.
Boudiera Claussenii P. Henn. Hedwigia **42**: (182). 1903.
?*Ascodesmis reticulata* Bainier, Bull. Soc. Myc. Fr. **23**: 137. 1907.

Apothecia minute, less than 1 mm. in diameter, scattered or thickly gregarious, superficial, consisting of a tuft of asci and very stout paraphyses, at first entirely white, becoming dotted over with black specks, the ends of the asci filled with colored spores, finally becoming entirely black; excipulum almost wanting or consisting of loose mycelium similar to the paraphyses; asci broad-clavate to ovoid, reaching a length of 80 μ and a diameter of 30 μ, 8-spored; spores 2-seriate or irregularly crowded together, perfectly globose, becoming pale-brown and reticulated, reaching a diameter of 10–12 μ; reticulations net-like, the meshes reaching a diameter of 3 μ, the ridges of the reticulations thin and projecting about the periphery of the spore as minute spines; paraphyses hyaline, stout, scarcely enlarged above, reaching a diameter of 5–6 μ.

On excrement of dogs and tigers, less frequently on the excrement of other animals.

TYPE LOCALITY: Europe.

DISTRIBUTION: New York; also in Europe.

ILLUSTRATIONS: Ann. Sci. Nat. IV. **7**: *pl. 4, f. 20–23;* Zukal, Mycol. Unters. *pl. 2, f. 5–10;* Hedwigia **42**: (182), *f. 1–3.*

Ascodesmis porcina Seaver, sp. nov.

Apothecia very small, scarcely visible, scattered or thickly gregarious, at first subglobose, expanding and becoming subdiscoid, externally whitish or pallid, not exceeding 0.5 mm. in diameter; hymenium strongly convex, becoming dark, finally almost black by reason of the dark colored spores; excipulum almost wanting; asci broad clavate to ovoid, abruptly narrowed into a short stem-like base, reaching a length of 75–90 μ and a diameter of 25–35 μ; spores 2-seriate or very irregularly bunched near the end of the ascus, subglobose, at first hyaline and smooth, becoming pale-brown and rough, reaching a diameter of 10–13 μ, or occasionally 10–11 × 12–13 μ; spore-roughenings very variable, consisting of minute rounded wart-like projections, short interrupted ridges, or often with one conspicuous simple or branched ridge extending across the visible surface of the spore; paraphyses stout, gradually enlarged at their apices, reaching a diameter of about 5 μ.

On excrement of pigs.

TYPE LOCALITY: Grown in the laboratories of the New York Botanical Garden on pig dung sent from Porto Rico.

DISTRIBUTION: Cultivated on pig dung from Porto Rico and New Jersey.

NEW YORK BOTANICAL GARDEN.

EXPLANATION OF PLATE CLXXII

Figs. 1–5. *Ascodesmis microscopica* (Crouan) Seaver.
Fig. 1. Young asci and paraphyses.
Fig. 2. Asci and paraphyses showing different stages in their development.
Fig. 3. Ascus with young spores.
Fig. 4. Ascus with mature spores.
Fig. 5. Mature spores isolated.
Figs. 6–9. *Ascodesmis porcina* Seaver.
Fig. 6. Young and mature asci.
Fig. 7. Ascus with spores partially matured.
Fig. 8. Ascus and paraphysis with mature spores.
Fig. 9. Mature spores isolated.